

A NEW GENUS AND NEW ASSIGNMENTS IN THE  
AMERICAN CHOREUTIDAE (LEPIDOPTERA: SESIOIDEA)<sup>1</sup>

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*Abstract.*—*Caloreas*, new genus, is described and 18 New World species are transferred to it. Other New World species of *Choreutis* or "*Simaethis*" are assigned to *Anthophila*, *Brenthia*, *Choreutis*, *Eutromula*, *Hemerophila*, *Tebeuna*, and *Tortyra*, with 50 new combinations. Two species are transferred to Stenomidae and one species is transferred to Glyphipterigidae. One genus and 7 species are synonymized.

The genus *Choreutis* is heterogeneous as presently constituted, with species in North and South America belonging in several genera, including the new genus described below. To assign the Nearctic species for the forthcoming checklist fascicle of the series, *The Moths of America North of Mexico*, the systematic changes in *Choreutis* and related genera are presented here ahead of my revision of the Nearctic Choreutidae. Other New World species described in the conglomerate *Choreutis* or "*Simaethis*" (*Simaethis* is a synonym of *Anthophila*), are also assigned to several genera.

All described New World species of the genera noted herein are included, except for *Brenthia* and *Tortyra* where only the transferred species are noted. New assignments of the included species are based on examination of the type-specimens, rare exceptions involve lost types. The separation of Choreutidae from Glyphipterigidae has been discussed in another paper (Heppner, 1977).

*Caloreas* Heppner, new genus

*Type-species.*—*Choreutis apocynoglossa* Heppner, 1976.

Adults small (8-18 mm wingspread). Head: Frons smooth; vertex with scales loosely appressed; labial palpus upturned, with long scale tuft on segment 2; haustellum moderately scaled toward base. Thorax: Smooth-scaled; forewing with pterostigma; costal margin convex; apex rounded; tornus broadly rounded; anal margin convex; weak extension of M1 for chorda; veins R1 to R4 all to costal margin, R5 to termen; R3 free of R4 and R5 free of M1 at end on cell; M3 stalked with CuA1 at base; CuA1 and CuA2 parallel; CuP present near wing margin; hindwing costal margin convex; apex moderately pointed; tornus broadly rounded but distinct, forming triangular wing shape; Rs base becoming vestigial, with distal end to apex; M1-M3 parallel to termen; M3 short-stalked with CuA1 before end of cell. Abdomen: Male genitalia with uncus absent; large socius; gnathos absent; valva oblong, variously modified with apical projections

or simple; sacculus strong, with large setal field; usually a setal field below apex of valva; juxta-anellus as flat plate, with elongate end attached to saccus base; saccus large; aedeagus with phallobase; cornutus present; female genitalia with unspecialized ovipositor; papilla analis with well-defined, rounded edge; apophyses strong, of moderate length, occasionally short; ostium often large, sclerotized; ostium fused onto heavily sclerotized sternal plate of segment 7; bursa copulatrix often heart-shaped, attached to ductus bursae at distinct offset juncture to ventrum of bursa; signum usually present as spicule band between "heart" lobes of bursa and at ductus juncture; ductus bursae often sclerotized full length or partly; ductus seminalis junction at  $\frac{1}{2}$  length from ostium; bulla seminalis small.

*Caloreas* is feminine in gender and is derived from the Greek for "beautiful mountain nymph" (*kalo* + *oreias*).

*Discussion.*—*Caloreas* is distinguished from *Tebenna* adults by the parallel CuA1 and CuA2 of the forewings and by M3 stalked basally with CuA1 in the hindwings. *Tebenna* has CuA1 and CuA2 curved toward each other at the termen of the forewings and lacks M3 in the hindwings. In *Choreutis* the forewing veins M3 and CuA1 are divergent at the termen and M3 and CuA1 are long-stalked in the hindwing. *Choreutis* also has R3 and R4, as well as R5 and M1, nearly fused at the end of the cell of the forewings. In wing maculation the three genera are similar, species of *Tebenna* being especially similar to many *Caloreas*. Wings of *Choreutis* species typically are more pointed at the apexes of the fore- and hindwings than in the other two genera, although *Choreutis extrinsicella* Dyar and *Choreutis pernivalis* Braun are unusual in having a wing shape nearly as in *Caloreas*. The genitalia and wing venation of these two species, however, are characteristic of *Choreutis*. Adults of *Caloreas* are diurnal fliers—as are all Choreutidae—and typically have areas of metallic iridescent scales on the forewings.

Almost all the species of *Caloreas* have an offset bursa similar to that illustrated by Heppner (1976) for *C. apocynoglossa* (Heppner). *Choreutis* species have a simple teardrop type of bursa-ductus bursae arrangement, as do typical *Tebenna* species. Of the *Caloreas* described thus far, only a few species have a bursa-ductus bursae arrangement differing from typical *Caloreas*: the bursa is similar but it is somewhat off-center in attachment to the ductus bursae and twisted 180° at the juncture of the ductus with the bursa. These untypical *Caloreas* show a development toward related species of *Tebenna*. This tendency to *Tebenna* is enhanced by the superficial similarity of the male genitalia, especially in *Caloreas leucobasis* (Fernald) and *Caloreas multimarginata* (Braun), to typical *Tebenna*.

*Caloreas* and related genera appear to have diverged among different plant families. *Caloreas* species have host plants mostly in Boraginaceae, while *Choreutis* species utilize Labiatae. *Tebenna* species utilize mostly Compositae, but there are a few host records in Umbelliferae and Scro-

phulariaceae. The related *Eutromula* have hosts in Betulaceae, Ulmaceae, Salicaceae, Ericaceae, and Rosaceae in temperate regions, with many species on Moraceae (*Ficus* spp.) in tropical areas. *Hemerophila* and *Tortyra* are known virtually only from *Ficus* (Moraceae). *Anthophila* hosts are mostly in Urticaceae. *Brenthia* hosts are in Fagaceae, Leguminosae, and Urticaceae. These host records are based on relatively few species, since most Choreutidae are not known biologically.

*Caloreas* has speciated to a great extent in the montane areas of western North America. In addition to the eight described Nearctic species, there are about 12 more *Caloreas* that are undescribed. The situation is similar in Nearctic *Tebenna* where about six species are undescribed.

The Neotropical *Simaethis chalybea* Felder and Rogenhofer is omitted from the checklist below, since its true position is not known: it may not belong in Choreutidae. *Anthophila fabriciana* (Linnaeus) is Palearctic and past reference to this species in the North American literature refers to the western *Anthophila alpinella* (Busck) or an undescribed species from eastern Canada. *Brenthia pavonacella* Clemens is not known from south of central Texas and reference to this species in the Neotropical literature refers to various other species of *Brenthia* which, while difficult to distinguish superficially, are easily distinguished by genitalic characters.

#### Checklist and New Combinations

The New World species described in *Choreutis*, "*Simaethis*," or related genera, are hereby segregated into their proper genera. Species with an asterisk are Neotropical. Species not in their original combination have the original genus indicated in brackets.

*Anthophila* Haworth, [1811]. Type-species: *A. fabriciana* (Linnaeus).

*Simaethis* Leach, 1815. Type-species: *A. fabriciana* (Linnaeus).

*Anthophila alpinella* (Busck, 1904) [*Hemerophila*]. New combination.

\**Anthophila brachymorpha* (Meyrick, 1915) [*Simaethis*].

*Brenthia* Clemens, 1860. Type-species: *B. pavonacella* Clemens.

\**Brenthia amatana* (Walker, 1863) [*Simaethis*].

\**Brenthia confluxana* (Walker, 1863) [*Simaethis*].

\**Brenthia depulsana* (Walker, 1863) [*Simaethis*].

\**Brenthia suavis* (Felder & Rogenhofer, 1875) [*Choreutis*].

*Caloreas* Heppner, new genus. Type-species: *C. apocynoglossa* (Heppner).

*Caloreas apocynoglossa* (Heppner, 1976) [*Choreutis*]. New combination.

*Caloreas augustella* (Clarke, 1933) [*Choreutis*]. New combination.

\**Caloreas blandinalis* (Zeller, 1877) [*Choreutis*]. New combination.

*Caloreas caliginosa* (Braun, 1921). [*Choreutis*]. New combination.

\**Caloreas charmonica* (Walsingham, 1914) [*Porpe*]. New combination.

*Caloreas coloradella* (Kearfott, 1902) [*Choreutis*]. New combination.

\**Caloreas cydrotia* (Meyrick, 1915) [*Choreutis*]. New combination.

- \**Caloreas enantia* (Walsingham, 1914) [*Porpe*]. New combination.  
 \**Caloreas hymenaea* (Meyrick, 1909) [*Choreutis*]. New combination.  
 \**Caloreas lactibasis* (Walsingham, 1914) [*Porpe*]. New combination.  
*Caloreas leucobasis* (Fernald, 1900) [*Choreutis*]. New combination.  
 \**Caloreas loxotenes* (Walsingham, 1914) [*Porpe*]. New combination.  
*Caloreas multimarginata* (Braun, 1925) [*Choreutis*]. New combination.  
*melanifera* (Kiefer, 1937) [*Choreutis*]. New synonymy.  
*Caloreas occidentella* (Dyar, 1900) [*Choreutis*]. New combination.  
 \**Caloreas pelinobasis* (Walsingham, 1914) [*Porpe*]. New combination.  
*Caloreas schausiella* (Busck, [1907]) [*Choreutis*]. New combination.  
 \**Caloreas tacubayella* (Kearfott, 1908) [*Choreutis*]. New combination.  
 \**Caloreas venusta* (Walsingham, 1914) [*Porpe*]. New combination.  
*Choreutis* Hübner, [1825]. Type-species: *C. myllerana* (Fabricius).  
*Choreutes* Treitschke, 1835, emendation.  
 \**Choreutis clemensella* (Walsingham, 1914) [*Porpe*]. New combination.  
*Choreutis dyarella* Kearfott, 1902.  
*Choreutis extrincicella* Dyar, 1900.  
*Choreutis inflatella* (Clemens, 1863) [*Brenthia*].  
*virginiella* (Clemens, 1864) [*Brenthia*]. New synonymy.  
*Choreutis pernivalis* Braun, 1921.  
*Choreutis sororculella* Dyar, 1900.  
*Eutromula* Frölich, 1828. Type-species: *E. pariana* (Clerck).  
*Eutromula betuliperda* (Dyar, 1902) [*Orchemia*]. New combination.  
*Eutromula diana* (Hübner, [1819-22]) [*Tortrix*].  
*decorana* (Zetterstedt, [1839]) [*Coccyx*].  
*luridana* (Walker, 1863) [*Amphisa*].  
*vicarialis* (Zeller, 1875) [*Simaethis*]. New synonymy.  
*Eutromula pariana* (Clerck, 1759) [no original combination].  
*lutosa* (Haworth, [1811]) [*Anthophila*].  
*Hemerophila* Hübner, [1817]. Type-species: *H. albertiana* (Cramer).  
*Gauris* Hübner, 1821. Type-species: *H. albertiana* (Cramer).  
*Walsinghamia* Riley, 1889. Type-species: *W. diva* Riley. New synonymy.  
 \**Hemerophila albertiana* (Cramer, [1781]) [*Phalaena Tortrix*].  
 \* *siphana* (Sepp, 1852) [*Phalaena*].  
 \* *zebra* (Walker, [1858]) [*Agrophila*].  
 \**Hemerophila arcigera* (Felder & Rogenhofer, 1875) [*Gauris*]. New combination.  
 \**Hemerophila biferana* (Walker, 1863) [*Gauris*].  
 \**Hemerophila bigerana* (Walker, 1863) [*Gauris*]. New combination.  
 \* *lacunaris* (Felder & Rogenhofer, 1875) [*Gauris*]. New synonymy.  
 \**Hemerophila canofusana* (Walker, 1863) [*Gauris*]. New combination.  
 \**Hemerophila chorca* (Meyrick, 1926) [*Tortyra*]. New combination.  
 \**Hemerophila cinctipes* (Felder & Rogenhofer, 1875) [*Gauris*].

- \* *isthmia* Walsingham, 1914. [*Hemerophila*]. New synonymy.
- \**Hemerophila contrariana* (Walker, 1863) [*Gauris*]. New combination.
- \**Hemerophila contubernalis* (Zeller, 1877) [*Simaethis*].  
*Hemerophila diva* (Riley, 1889) [*Walsinghamia*]. New combination.
- \**Hemerophila felis* Walsingham, 1914.
- \**Hemerophila gradella* Walsingham, 1914.
- \**Hemerophila houuttinialis* (Cramer, [1781]) [*Phalaena Pyralis*].
- \* *pulsana* (Walker, 1863) [*Gauris*].
- \**Hemerophila immarginata* Walsingham, 1914.
- \**Hemerophila lacinosella* Busck, 1914.
- \**Hemerophila meratella* Busck, 1914.
- \**Hemerophila milliaria* (Meyrick, 1922) [*Simaethis*]. New combination.
- \**Hemerophila musicosema* (Meyrick, 1926) [*Simaethis*]. New combination.
- \**Hemerophila ophiodesma* (Meyrick, 1915) [*Simaethis*]. New combination.
- \**Hemerophila orinympa* (Meyrick, 1926) [*Simaethis*]. New combination.
- \**Hemerophila rimulalis* (Zeller, 1875) [*Simaethis*].  
*dyari* Busck, 1900 [*Hemerophila*]. New synonymy.
- \**Hemerophila scenophora* (Meyrick, 1922) [*Simaethis*]. New combination.
- \**Hemerophila triacmias* (Meyrick, 1926) [*Simaethis*]. New combination.
- \**Hemerophila tristis* (Felder & Rogenhofer, 1875) [*Gauris*]. New combination.
- \**Hemerophila velatana* (Walker, 1863) [*Gauris*].
- \**Hemerophila xutholopa* Walsingham, 1914.
- Tebenna* Billberg, 1820. Type-species: *T. bjerkandrella* (Thunberg).  
*Porpe* Hübner, [1825]. Type-species: *T. bjerkandrella* (Thunberg).
- \**Tebenna alliciens* (Meyrick, 1926) [*Choreutis*]. New combination.
- Tebenna balsamorhizella* (Busck, 1904) [*Choreutis*]. New combination.
- Tebenna carduiella* (Kearfott, 1902) [*Choreutis*]. New combination.  
*busckiella* (Kearfott, 1902) [*Choreutis*]. New synonymy.
- \**Tebenna chrysoterma* (Meyrick, 1932) [*Choreutis*]. New combination.
- \**Tebenna fuscidorsis* (Zeller, 1877) [*Choreutis*]. New combination.
- Tebenna gemmalis* (Hulst, 1886) [*Chalcoela*]. New combination.
- Tebenna gnaphaliella* (Kearfott, 1902) [*Choreutis*]. New combination.
- Tebenna immutabilis* (Braun, 1927) [*Choreutis*]. New combination.
- \**Tebenna lapidaria* (Meyrick, 1909) [*Choreutis*]. New combination.
- \**Tebenna leptilonella* (Busck, [1934]) [*Choreutis*]. New combination.
- Tebenna onustana* (Walker, 1864) [*Simaethis*]. New combination.  
*ohiensis* (Zeller, 1875) [*Choreutis*].
- Tebenna piperella* (Busck, 1904) [*Choreutis*]. New combination.
- Tebenna silphiella* (Grote, 1881) [*Choreutes* (sic)]. New combination.
- Tortyra* Walker, 1863. Type-species: *T. spectabilis* Walker.
- \**Tortyra aurofasciana* (Snellen, 1875) [*Simaethis*].
- Tortyra slossonia* (Fernald, 1900) [*Walsinghamia*].



Species belonging to a new genus:

\**Choreutis aeneigutta* Felder and Rogenhofer, 1875.

\**Brenthia chrysosperma* Meyrick, 1931.

\**Brenthia ochripalpis* Meyrick, 1920.

\**Simaethis plutusana* Walker, 1863.

\**Simaethis rutilella* Walker, 1863.

\**Simaethis scintillana* Walker, 1863.

Species excluded and hereby transferred to other families:

Stenomidae

\*"*Stenoma*" *albipes* (Felder and Rogenhofer, 1875) [*Simaethis*]. New combination.

\*"*Stenoma*" *cyanastra* (Meyrick, 1909) [*Brenthia*]. New combination.

Glyphipterigidae

\**Cronicombra lamella* (Busck, 1914) [*Porpe*]. New combination.

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#### Footnote

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